Space Weather Forecast

Issued on Thursday, 03 November 2022 at 13:00 Local

This forecast provides a four day assessment of space weather events. The probabilities stated below are for reaching or exceeding the given levels. For more information about space weather impacts please see the Met Office Space Weather Scales https://www.metoffice.gov.uk/weather/learn-about/space-weather/uk-scales

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Space Weather Forecast Headline: Chance of G1/Minor Storms from 3rd November.

Analysis of Space Weather Activity over past 24 hours

Solar Activity: Solar activity has been Low, with only weak Common-class flares. There are five sunspot regions on the disk, all simple and relatively inactive. No Earth-directed CMEs (coronal mass ejections) have been observed on available imagery.
Solar Wind / Geomagnetic Activity: The solar wind has been slightly elevated through the period, but with brief increases into elevated levels. Total magnetic field strength has been predominantly moderate, with the north-south component, Bz mostly weak, but with brief moderately negative peaks. Geomagnetic activity was Quiet to Active (Kp2-4).
Energetic Particles / Solar Radiation: The count rate of energetic particles (High energy protons) remained at background with no solar radiation storms observed.

Four-Day Space Weather Forecast Summary

Solar Activity: Solar activity is likely to be Low or Very Low, with a slight chance of isolated Moderate activity as further active regions are due to rotate onto the visible disc.
Solar Wind / Geomagnetic Activity: No Earth-directed CMEs are forecast. The Earth is under the influence of a fast solar wind. This may subside briefly on 3rd November before it is followed by a further connection to the fast winds from another coronal hole, either late on the 3rd or early on the 4th of November. This feature is currently forecast to produce speeds in the region of 600 km/s. Geomagnetic activity will be mainly Unsettled with Active intervals and a chance of G1/Minor Storms during the 3rd and 4th November. From the 5th geomagnetic activity is likely to ease to Quiet to Unsettled with a slight chance of Active/ G1 minor geomagnetic storms.
Energetic Particles / Solar Radiation: The count rate of energetic particles (High energy protons) is forecast to persist at background with no solar radiation storms occurring.

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Geomagnetic Storms:

Geo-Magnetic Storm Probability (Exceedance)	Level	Past 24 Hours (Yes/No)	Day 1 (00-24 UTC) (%)	Day 2 (00-24 UTC) (%)	Day 3 (00-24 UTC) (%)	Day 4 (00-24 UTC) (%)
Minor or Moderate	G1 to G2	No	40	40	25	20
Strong	G3	No	1	1	1	1
Severe	G4	No	1	1	1	1
Extreme	G5	No	1	1	1	1

Radio Blackouts - X Ray Flares:

X Ray Flares Probability	Level	Past 24 Hours (Yes/No)	Day 1 (00-24 UTC) (%)	Day 2 (00-24 UTC) (%)	Day 3 (00-24 UTC) (%)	Day 4 (00-24 UTC) (%)
Active	R1-R2 M Class	No	10	10	10	10
Very Active	R3 to R5 X	No	1	1	1	1

Solar Radiation Storms - (High Energy Protons):

Radiation Storms Probability (Exceedance)	Level (cm^{-2} sr^{-1} s^{-1})	Past 24 Hours (Yes/No)	Day 1 (00-24 UTC) (%)	Day 2 (00-24 UTC) (%)	Day 3 (00-24 UTC) (%)	Day 4 (00-24 UTC) (%)
Active	≥ S1	No	1	1	1	1
Very Active	≥ S3 *	No	1	1	1	1

* S3 ≥ 10 MeV ≥ 1000 pfu and / or ≥ 50 MeV ≥ 10 pfu. (pfu = $cm^{-2}sr^{-1}s^{-1}$)

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